REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Claims 1, 4, 5, 7, 9, 11, 14, 16, 18-20, and 23-25 are currently being amended. Applicants respectfully submit that no new subject matter has been added to the claims. Claims 1-25 are pending in this application.

I. Rejection of Claims 1, 2, 6, 10-12, 15, and 19-24 Under 35 U.S.C. § 103(a)

In section 1 of the Office Action, Claims 1, 2, 6, 10-12, 15, and 19-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,256,334 to Adachi (Adachi) in view of U.S. Patent No. 6,603,799 to Hlasny (Hlasny) and further in view of U.S. Patent Publication No. 2005/0105594 to Giannakis et al. (Giannakis). Applicants respectfully traverse the rejection because Adachi, Hlasny, and Giannakis, alone and in combination, fail to teach, suggest, or disclose all of the elements of at least Claims 1, 11, 20, and 23, as amended.

Independent Claim 1, as amended, recites in part:

> after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern

Similarly, independent Claim 11, as amended, recites in part:

> means for after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern

Similarly, independent Claim 20 as amended, recites in part:

> the carrier sensing module further configured to monitor a frequency band to identify a low energy condition and to transmit the data according to the selected frequency hopping pattern a predetermined time delay after identifying the low energy condition

Similarly, independent Claim 23, as amended, recites in part:

> the carrier sensing module further configured to monitor a frequency band to identify a low energy condition and to transmit the data according to the selected frequency hopping pattern a predetermined time delay after identifying the low energy condition

Adachi states:

> In contrast, If there is a probe response signal from another radio base station 1 (YES in step S2), the search section 50a obtains, from the received probe response, the pattern and time (the timer value) of frequency hopping performed in another radio LAN 10 (another radio base station 1). The FH selection/setting section 50b selects, as the frequency hopping pattern of the radio base station itself, a frequency hopping pattern which is completely the same as that of the thus-obtained frequency hopping (step S3), and sets the timer 50c to a value different from the timer value (time) obtained from the probe response signal (e.g.: a value deviated from 800 msec or more) (step S4). Subsequently, frequency hopping (FH) is started (step S5).
>
> By setting the value of the timer 50c in the above-described manner, timing is selected at which no frequency interference occurs between the frequency hopping according to the previously-described pattern and frequency hopping performed in another radio LAN 10.

(col. 17, lines 48 – 60). Thus, Adachi merely relates to obtaining a probe response signal and setting a frequency hopping pattern and timing based on the probe response signal. Adachi fails to teach, suggest or disclose "after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern" as recited in Claims 1, 11, 20, and 23.

Hlasny states:

> Referring to FIGS. 3 and 5, to determine the hopping pattern of a potentially interfering HomeRF system, a device will tune its receiver to a first, predetermined probe frequency (PF1) 64 and monitor the frequency (F41) 502 until the beacon 42 in a superframe 40 or another periodically occurring signal is detected 504. When a signal at the first probe frequency (PF1) 64 is detected 504 a timer is started 506 and the receiver is tuned to a second predetermined probe frequency (PF2) 510.

> Timing can be initiated when the received signal strength (RSSI) at the probe frequency reaches a threshold level. Likewise, timing could be based on detection of a threshold value of a data characteristic of the signal other than signal strength such as the occurrence of a frequency sequence. When a signal at the second probe frequency 66 is detected 512, the first time interval (T1) 68 is noted 514 and timing of a second interval (T2) 72 is initiated 516. The receiver 14 is tuned to a third, predetermined probe frequency (PF3) 70 and monitors that frequency 518 until the signal of the interferer is detected at that frequency 520. When a signal is detected 520 at the third probe frequency (PF3) 70, the second time interval (T2) 72 is noted 522. The time intervals (T1) 68 and (T2) 72 are specified in numbers of hops in FIG.3.

(Col. 4 line 58 – col. 5 line 14). Thus, Hlasny merely describes a determination of a frequency hopping pattern. Therefore, Hlasny also fails to teach, suggest or disclose "after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern" as recited in Claims 1, 11, 20, and 23.

Giannakis states:

> FIG. 1 is a block diagram illustrating an exemplary ultra-wideband (UWB) communication system 2 in which a transmitter 4 communicates with a receiver 8 through a wireless channel 6. In accordance with the invention, pulse shaping techniques are applied in transmitter 4 to substantially maximize power and bandwidth in one or more frequency bands, e.g. the Federal Communications Commission (FCC) spectral mask for UWB communications, for UWB transmissions through wireless channel 6. UWB communication system 2 may be either single-band in order to use the entire UWB bandwidth from 3.1 - 10.6 GHz or multi-band to facilitate FH. Alternatively, UWB communication system 2 may utilize single-band UWB communication in selected frequency bands, i.e. 3.1 - 6.85 GHz, to facilitate lower cost and complexity implementations. Furthermore, transmitter 4 can allow avoidance of narrow-band interference (NBI) 7 in wireless channel 6 as well as provide efficient implementation of fast frequency hopping (FH) without invoking analog carriers.

(Para. [0039]). Thus, Giannakis merely relates to ultra-wideband communication. Therefore, Giannakis also fails to teach, suggest or disclose "after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern" as recited in Claims 1, 11, 20, and 23.

Thus, Adachi, Hlasny, and Giannakis, alone and in combination, fail to teach, suggest, or disclose all of the elements of at least Claims 1, 11, 20, and 23. An obvious rejection cannot be properly maintained where the references used in the rejection do not disclose all of the recited claim elements. Claims 2, 6, 10, 12, 15, 19, 21, 22, and 24 depend from one of Claims 1, 11, 20, and 23. Therefore, Applicants respectfully request withdrawal of the rejections of 1, 2, 6, 10-12, 15, and 19-24.

II. Rejection of Claim 25 Under 35 U.S.C. § 103(a)

In Section 2 of the Office Action, Claim 25 was rejected user 35 U.S.C. 103(a) as being unpatentable over Adachi in view of U.S. Patent No. 5,533,025 to Fleek et al. (Fleek). Applicants respectfully traverse the rejection of Claim 25 because Adachi and Fleek, alone and in combination, fail to teach, suggest, or disclose all of the elements of Claim 25.

Independent Claim 25, as amended, recites in part:

> after identifying the low energy condition, transmitting the data, after a predetermined time delay, according to the selected TFC

As discussed in Section I., Adachi fails to teach at least teach, suggest or disclose "after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern." Fleek states:

> With this invention, each remote station senses a first frequency using a carrier sense protocol. If the carrier signal of the first frequency is sensed, a request message is transmitted on the first frequency to the leader station after an appropriate delay that is determined by using the carrier sense protocol. The request message indicates a request to establish communication with a leader station. <u>On the other hand, if the carrier signal of the first frequency is not sensed, the request message can be</u>

> transmitted without delay. When a remote station receives a response to the request message from the leader station, the station then listens on the first frequency for a hop cycle trailer signal. Upon seeing the signal, the station will hop to a second frequency indicated in the trailer signal at a time which is also indicated in the trailer signal. This second frequency is the frequency at which the stations communicate with each other. If, however, a remote station does not receive a response by a certain time, it hops to a third frequency that is randomly chosen and the process (as described above in this paragraph) repeats itself with the remote station sensing the third frequency instead of the first frequency.

(Col. 3, lines 16 – 36, with emphasis added through underlining). Fleek further states:

> When a station (i.e., either a leader or remote station) has a packet that is ready for transmission, it senses the radio channel to determine if carrier is present as indicated by 220. If a carrier is present, then the remote station waits until the radio channel becomes idle at 230 and then waits (i.e., backoffs) a random amount of time in block 240 and begins the entire sensing and transmit procedure all over again. Many different procedures have been proposed for determining how long the random backoff time should be. In our example, we use a truncated binary exponential backoff mechanism. That is to say, the backoff time is chosen as a uniformly distributed random integer R (representing units of time) in the range ....
>
> If no carrier is sensed at 220, the ready packet at the head of the transmit queue is transmitted in block 270.

(Col. 5, lines 31 – 49, with emphasis added through underlining). Thus, as also shown with reference to Fig. 3 of Fleek, Fleek teaches that, when no carrier is sensed, a random time is waited and then the entire sensing and transmit procedure" is repeated "all over again." Therefore, Fleek, also fails to teach, suggest or disclose "after identifying the low energy condition, transmitting the data, after a predetermined time delay, according to the selected TFC " as recited in Claim 25. Moreover, Fleek teaches away from transmitting the data, after a predetermined time delay because Fleek expressly discloses that an "entire sensing and transmit procedure" is repeated after the random time delay instead of transmitting. If a carrier is not sensed initially, the packet is transmitted immediately without a time delay.

An obvious rejection cannot be properly maintained where the references used in the rejection do not disclose all of the recited claim elements. Therefore, Applicants respectfully request withdrawal of the rejection of Claim 25.

III. **Rejection of Claim 4, 5, and 14 Under 35 U.S.C. § 103(a)**

In section 3 of the Office Action, Claims 4, 5, and 14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Adachi in view of Hlasny and further in view of Giannakis further in view of Fleek. Applicants respectfully traverse the rejection because Adachi, Hlasny, Giannakis, and Fleek alone and in combination, fail to teach, suggest, or disclose all of the elements of at least Claims 1 and 11. Claims 4, 5, and 14 depend from Claims 1 and 11.

As discussed in Section I., Adachi, Hlasny, and Giannakis fail to teach at least "after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern" as recited in Claims 1 and 11. As discussed in Section II., Fleek fails to teach at least "after identifying the low energy condition, transmitting the data, after a predetermined time delay, according to the selected TFC " as recited in Claim 25. For similar reasons discussed relative to Claim 25, Fleek also fails to teach at least "after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern" as recited in Claims 1 and 11.

An obvious rejection cannot be properly maintained where the references used in the rejection do not disclose all of the recited claim elements. Therefore, Applicants respectfully request withdrawal of the rejection of Claims 4, 5, and 14.

IV. **Rejection of Claim 3 and 13 Under 35 U.S.C. § 103(a)**

In section 4 of the Office Action, Claims 3 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Adachi in view of Hlasny and further in view of Giannakis and U.S. Patent No. 6,333,937 to Ryan (Ryan). Applicants respectfully traverse the rejection because Adachi, Hlasny, Giannakis, and Ryan alone and in combination, fail to teach,

suggest, or disclose all of the elements of at least Claims 1 and 11, as amended. Claims 3 and 13 depend from Claims 1 and 11.

As discussed in Section I., Adachi, Hlasny, and Giannakis fail to teach at least "after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern" as recited in Claims 1 and 11. Ryan states:

> In a frequency division multiplex access method, the common access channel allocation manager program adaptively provides alternate frequency carriers. In a code division multiplex access method, the common access channel allocation manager program adaptively provides alternate codes. In an orthogonal frequency division multiplex (OFDM) wireless access method where the waveform is composed of many closely spaced frequency carriers, each carrying a single complex (magnitude and phase) symbols, the common access channel allocation manager program adaptively provides an alternate set of closely spaced frequency carriers.

(Col. 3, lines 35-41). Thus, Ryan merely relates to different access methods. Therefore, Ryan also fails to teach, suggest, or disclose "after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern" as recited in Claims 1 and 11. An obvious rejection cannot be properly maintained where the references used in the rejection do not disclose all of the recited claim elements. Therefore, Applicants respectfully request withdrawal of the rejection of Claims 3 and 13.

V. <u>Rejection of Claims 7-9 and 16-18 Under 35 U.S.C. § 103(a)</u>

In section 5 of the Office Action, Claims 7-9 and 16-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Adachi in view of Hlasny in view of Giannakis and further in view of U.S. Patent Publication No. 2005/0058181 to Lyle et al. (Lyle). Applicants respectfully traverse the rejection because Adachi, Hlasny, Giannakis, and Lyle alone and in combination, fail to teach, suggest, or disclose all of the elements of at least Claims 1 and 11, as amended. Claims 7-9 and 16-18 depend from Claims 1 and 11.

As discussed in Section I., Adachi, Hlasny, and Giannakis fail to teach at least "after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern" as recited in Claims 1 and 11. Lyle states:

> The device could join the interfering network, obtain the interfering hop sequence data, and then proceed to instigate an ad-hoc network having knowledge of the interfering network's hop sequence in such a way that the initiated hop sequence tends to not coincide statistically with the interfering network's hop sequence using any of the methods described hereinbelow.

(Para [0032]). Lyle generally states that a device could instigate an ad-hoc network in such a way as to not coincide with the interfering network's sequence. Therefore, Lyle also fails to teach, suggest, or disclose "after identifying the low energy condition, transmitting data, after a predetermined time delay, on a transmit frequency band according to the selected frequency hopping pattern" as recited in Claims 1 and 11. An obvious rejection cannot be properly maintained where the references used in the rejection do not disclose all of the recited claim elements. Therefore, Applicants respectfully request withdrawal of the rejection of Claims 7-9 and 16-18.

Applicant believes that the present application is in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for

such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date November 28, 2007

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